

What is claimed is:

1. A semiconductor device having an SOI (Silicon On Insulator) layer of a first conductivity type on an SOI substrate, a source region and a drain region of a 5 second conductivity type provided on said SOI layer with a channel region in between, a gate insulating film formed above said SOI layer and a gate electrode formed above said gate insulating film, further comprising:

10 a buried insulating film formed in that region of said SOI layer which lies between said source region and said drain region and under said gate insulating film; and

15 a non-doped silicon film formed between said buried insulating film and said gate insulating film in contact with a top surface of said buried insulating film and serving as a channel region.

20 2. The semiconductor device according to claim 1, having two low-concentration regions which are formed in contact with said source region and said drain region respectively and apart from one another on the channel region side and a concentration of whose impurity of said second conductivity type is lower than that of an impurity of said source region and said drain region.

25 3. The semiconductor device according to claim 1, having two extension regions which are formed in contact with said source region and said drain region respectively and apart from one another on the channel

region side and a concentration of whose impurity of said second conductivity type is equal to that of an impurity of said source region and said drain region.

4. The semiconductor device according to claim 1,
5 having:

two low-concentration regions which are formed in contact with said source region and said drain region on the channel region side and a concentration of whose impurity of said second conductivity type is lower than
10 that of an impurity of said source region and said drain region; and

two extension regions which are formed in contact with said source region and said drain region on the channel region side and a concentration of whose impurity
15 of said second conductivity type is equal to that of an impurity of said source region and said drain region; and

5. The semiconductor device according to claim 1,
wherein an impurity concentration of that region of said SOI layer which lies under said buried insulating film is
20 equal to or greater than $1 \times 10^{18} \text{ cm}^{-3}$.